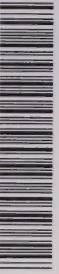


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**Smoke detectors
in Ontario Housing
Corporation
dwellings**



Ministry of Housing
Ontario Housing Corporation



Ministry of Housing
Ontario Housing Corporation

Claude Bennett
minister

Donald Crosbie
deputy minister



Office of the
Chairman

Ontario
Housing
Corporation

101 Bloor Street West
Toronto Ontario
M5S 1P8

January 10, 1978.

The Honourable John R. Rhodes,
Minister of Housing,
Hearst Block, 4th Floor,
Queen's Park, Toronto.

Dear Mr. Rhodes:

It gives me a great deal of pleasure on behalf of the Ontario Housing Corporation Board of Directors, General Manager. D. J. Beesley and staff members involved, to forward this report on OHC's large-scale installation of smoke detectors throughout its assisted rental housing portfolio.

We believe the installation of smoke detectors in some 79,000 OHC rental dwellings in nearly 300 Ontario communities is the most extensive use of smoke detectors in residential buildings by any one agency.

The program was completed well within the required time frame and at about half the estimated cost, clearly indicating the competitiveness and responsiveness of the marketplace.

The decision to implement the program followed firm commitments by the OHC Board, Management Board of Cabinet and Central Mortgage and Housing Corporation to improve fire protection in Ontario's assisted rental housing.

I expect OHC's experience, as recorded in this report, will further demonstrate the potential of smoke detectors for saving lives and property and will help to create a new awareness of their value among the public at large.

Yours sincerely,

A. J. Trusler.
Chairman
OHC board of directors



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REPORT ON
LARGE SCALE INSTALLATION OF SMOKE DETECTORS
BY ONTARIO HOUSING CORPORATION

GENERAL:

Ontario Housing Corporation, a Crown corporation created by the Government of Ontario, owns about 79,000 assisted rental dwelling units in 1,103 separate projects located in 279 municipalities. The housing is managed either directly by the corporation, or by regional or district housing authorities under guidance of the corporation. This housing portfolio is rented generally on a 'geared-to-income' basis to families and senior citizens.

ORIGIN OF THE SMOKE DETECTOR PROGRAM:

Early in 1974, a fire in an OHC back-to-back row house in Metro Toronto took the lives of a family of six. The corporation's board of directors authorized a course of action to be taken to improve fire life-safety. The maintenance engineering branch suggested that smoke detectors would provide a life-saving potential far greater than traditional fire alarm or extinguishing devices. In June 1974, the board of directors authorized the installation of smoke detectors throughout its housing portfolio. Initial plans gave high priority to the the installation of detectors in all singles entry dwellings, and others classed as having limited egress.

At this stage, several decisions were made:

- the ionization type of detector was chosen over photo-electric, as it seemed more advanced technically.
- all installations would be as single station, self-contained units in each dwelling, rather than more expensive 'system' installations with central alarm and enunciation panel.
- a specification to cover smoke detector installation for 110-volt, wired to the dwelling unit service panel, could be devised to suit all dwellings, whether single, row house, or high-rise apartment.
- a computer program to plan, expedite, and monitor progress would be needed. This would provide valuable feedback to the actioning field personnel on current cost/unit and contractor's performance.

TIMING OF PROGRAM:

1975

In 1975, the first phase of about 5,000 units, most of them defined as 'limited egress', was completed. The balance of the portfolio was then planned for completion in two phases with funds budgeted to complete the work in 1976-77.

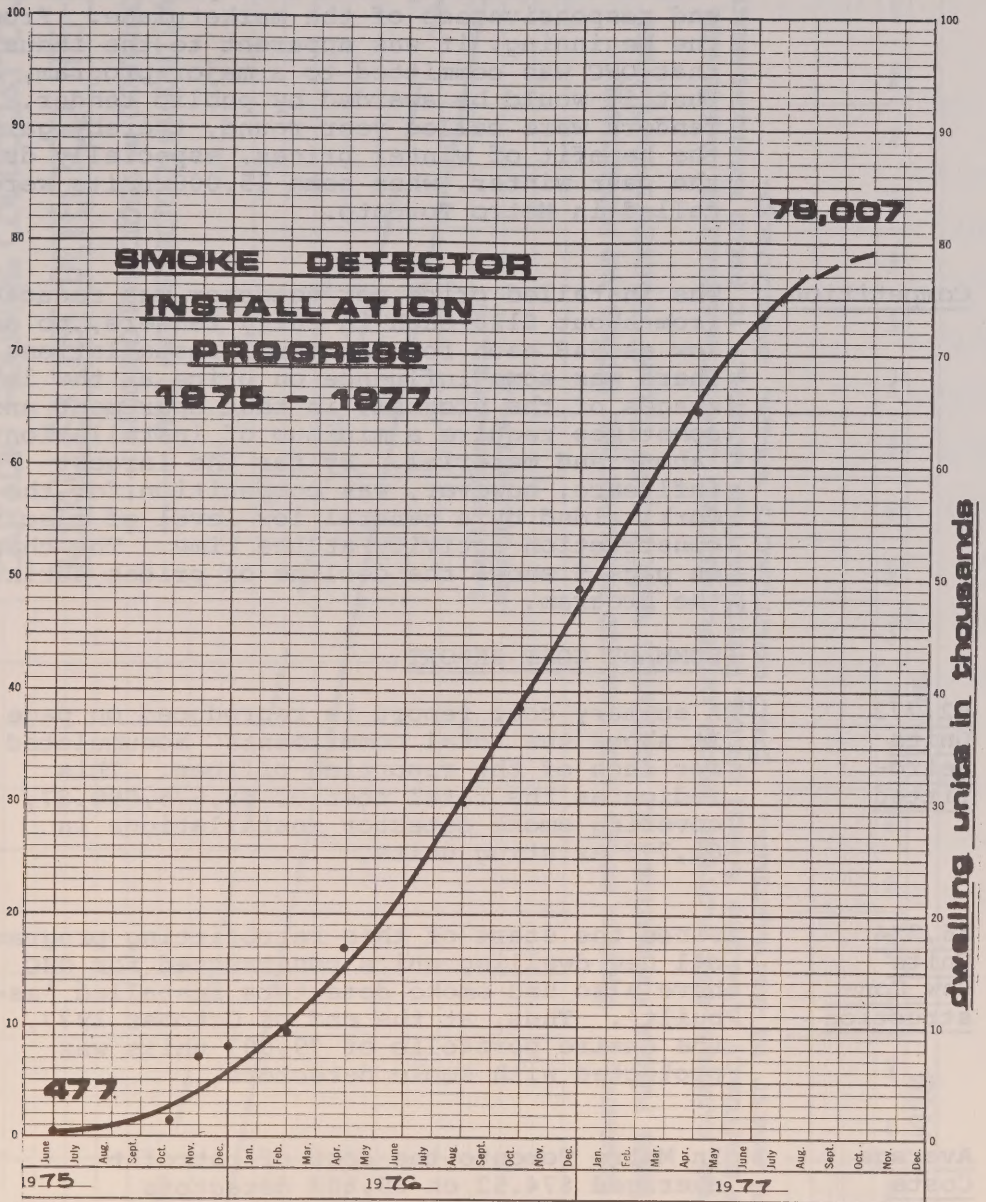
New
Buildings

All new buildings erected since 1974 have had smoke detectors installed during their construction as part of the contract price. The computer periodically updates the project profile to include these new units as completed, and the field staff records the make, model and number of detectors. Thus, the current total units is 79,007, but the retrofit program has covered only 62,773. Costs shown in this report are for this latter number.

1976 &
1977

During 1976 and 1977 the main work was accomplished. A total of 540 tender calls were made. There was keen competition between contractors, and also for supply of devices by the six approved manufacturers.

The next page illustrates graphically the accumulated units completed.



COST OF PROGRAM:

Estimate Halved

The program was completed for about half of the original estimated cost. This can be attributed entirely to the competitiveness and responsiveness of the marketplace. From the beginning, it was apparent to the industry that OHC was committed to a major program, and that it would be awarded by public tender. Tenders were called year-round, thereby gaining the benefit of winter prices, especially during the past winter, when some 15,000 units were called in Metro Toronto.

Competition

The installed price per detector was reduced from about \$120 each in early tenders, to as low as \$48 each for the final installations. There was some influence on price at the latter stages of the program, in that apartment units sometimes require a minimum of installation labour and material. By far the largest influence, however, was competition for the work, aided by a general low level of electrical construction activity at the time. The chart on page 5 shows the decline of prices during the program.

SUMMARY COST REPORT

62,773 Units Retro- fitted

A summary cost report is reproduced on page 7. It shows the total commitments accumulated for each of the reporting offices. This indicates the total cost of \$5,675,090.87, covering smoke detector installations in 62,773 existing units.

16,234 Units New Con- struction

Since the start of this retrofitting program, all new dwelling units constructed for OHC have also had smoke detectors installed 'as-built'. Thus, at the end of October 1977, the entire portfolio of 79,007 units was protected with smoke detectors.

Average Costs

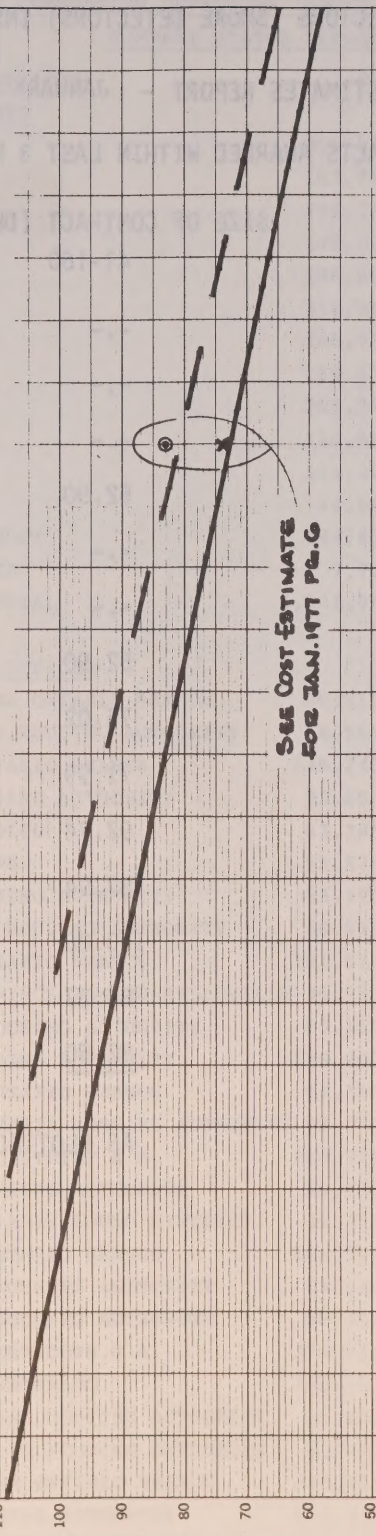
In Metro Toronto the cost of retrofit averaged \$74.52 on 29,803 detectors installed. Throughout the province, based on 38,257 detectors installed, an average cost of \$90.28 per detector was achieved.

ONTARIO HOUSING CORPORATION

INSTALLED COST/DETECTOR 1975-1977

--- 41 TO 160 DETECTORS IN CONTRACT
— OVER 160 DETECTORS IN CONTRACT

PER DETECTOR



SEE COST ESTIMATE
FOR JAN. 1977 P.C.G.

CONSISTENT DROP IN PRICES IS ATTRIBUTED TO COMPETITIVE BIDDING AND PROGRESSIVELY MORE PRECISE ESTIMATING. ALL CONTRACTS WERE CALLED TO ONE 'STANDARD' SPECIFICATION

THE CURVES ARE PLOTTED FROM COMPUTERIZED 3 MONTHS RUNNING AVERAGES OF CONTRACT AWARDS WHICH WERE DISTRIBUTED MONTHLY TO FIELD MANAGEMENT TO ASSIST IN ESTIMATING. 540 CONTRACTS WERE AWARDED.

1975	1976	1977
Sept.		
Oct.		
Nov.		
Dec.		
Jan.		
Feb.		
Mar.		
Apr.		
May		
June		
July		
Aug.		

PRODUCTS OF COMBUSTION DETECTORS (SMOKE DETECTORS) INSTALLATION

COST ESTIMATES REPORT - JANUARY 1, 1977

COST/DEVICE FOR CONTRACTS AWARDED WITHIN LAST 3 MONTHS

AREA OFFICE	SIZE OF CONTRACT (DEVICES)		
	0-40	41-160	OVER 160
DISTRICT A	-.-	-.-	56.50
DISTRICT D	-.-	-.-	53.38
DISTRICT F	-.-	-.-	65.79
DISTRICT G	-.-	52.90	52.90
DISTRICT J	-.-	-.-	65.56
MONTREAL TRUST	-.-	-.-	98.00
** METRO AVERAGE **	-.-	52.90	62.13
CENTRAL BRANCH	83.58	75.02	-.-
EASTERN BRANCH	90.14	71.99	73.49
NORTHERN BRANCH	84.73	92.74	78.88
SOUTHERN BRANCH	85.19	87.94	86.90
SOUTH-WESTERN BRANCH	93.21	100.88	91.14
** BRANCH AVERAGE	86.38	84.37	82.71
*** GRAND AVERAGE ***	86.38	<u>82.50</u>	<u>74.16</u>

AS PLOTTED ON CHART SHOWN ON
PAGE 5

PRODUCTS OF CUMBUSTION DETECTORS (SMOKE DETECTORS) INSTALLATION

SUMMARY STATUS REPORT

<u>REPORTING OFFICES</u>	<u>COST</u>	<u>UNITS</u>
<u>METRO TORONTO</u>	\$	
DISTRICT A	306,022.32	2951
DISTRICT B	167,781.76	2062
DISTRICT C	199,777.00	2873
DISTRICT D	175,725.10	2747
DISTRICT E	196,986.00	2200
DISTRICT F	118,542.00	1899
DISTRICT G	206,933.21	2530
DISTRICT H	164,078.50	1831
DISTRICT I	201,999.00	2355
DISTRICT J	110,996.00	1496
GREENWIN	121,223.00	1735
MERIDIAN	94,862.00	1674
MONTREAL TRUST	148,408.00	1206
TORONTO YWCA	7,700.00	64
... METRO TOTAL	2,221,043.89	27623
 <u>PROVINCIAL OFFICES</u>		
NORTHWESTERN ONTARIO BRANCH	36,515.00	314
THUNDER BAY HOUSING AUTHORITY	68,565.00	740
CENTRAL ONTARIO BRANCH	149,245.59	1644
GUELPH HOUSING AUTHORITY	82,806.19	871
PEEL PORTFOLIO	63,346.95	751
PETERBOROUGH	55,574.17	584
OSHAWA HOUSING AUTHORITY	33,170.70	446
OWEN SOUND HOUSING AUTHORITY	46,993.50	513
EASTERN ONTARIO BRANCH	151,573.92	1627
HASTINGS-PRINCE EDWARD-BELLEVILLE	46,750.40	478
KINGSTON HOUSING AUTHORITY	63,156.00	495
OTTAWA HOUSING AUTHORITY	540,902.20	6398
NORTHERN ONTARIO BRANCH	62,313.02	552
SAULT STE.MARIE HOUSING AUTHORITY	90,777.10	604
SUDBURY & DISTRICT H.A.	208,328.26	1616
TIMMINS HOUSING AUTHORITY	50,813.52	419
NIPISSING-PARRY SOUND DISTRICT	46,375.52	504
SOUTHERN ONTARIO BRANCH	103,521.34	1058
BRANTFORD HOUSING AUTHORITY	44,940.30	555
CAMBRIDGE HOUSING AUTHORITY	88,411.13	802
HAMILTON-WENTWORTH H.A.	373,941.75	3710
KITCHENER-WATERLOO	140,042.00	1450
NORTH NIAGARA HOUSING AUTHORITY	91,643.44	993
NIAGARA FALLS HOUSING AUTHORITY	52,277.22	565
SOUTHWESTERN ONTARIO BRANCH	234,901.16	2491
LONDON HOUSING AUTHORITY	218,308.50	2424
WINDSOR HOUSING AUTHORITY	298,773.00	2546
... PROVINCE TOTAL...	3,454,045.98	35150
... GRAND TOTAL.....	<u>\$ 5,675,090.87</u>	<u>62773</u>

PROGRAM EXECUTION

The program was accomplished well within the required time and cost. Outlined below are some features which contributed to this success:

- senior and middle management took an interest and devoted time when required to make decisions and instruct staff.
- the proposition had natural appeal.
- budget funds were readily available and it was 'capital' work - which always seems more popular than maintenance.
- OHC's maintenance engineering branch was given free rein on technical matters, and was fully supported when necessary.
- the decentralized organization, including local housing authorities, was eminently capable of carrying out the major responsibility.

With decentralized authority, there is an inevitable trade-off for the gain of initiative at the local level in exchange for some slight loss of uniformity or standardization.

In Metro Toronto, where maintenance engineering was more involved in the installations, more was learned about the problems which arise. Early on it became evident there must be a formal inspection of all units in every contract, and this was arranged.

THE DIVIDENDS:

Review of the fire reports in OHC dwellings during the past two years shows that the smoke detector has proven a major factor in fire safety.

Exhibits which summarize 64 fire incidents appear on pages 10 & 11.

From these summaries, some fire statistics are taken.

Under the heading "Correlations", considering two or more aspects of the statistics together, certain results are noted.

In conclusion, a word or two of caution:

- The ionization chamber smoke detector is very sensitive to cooking fumes. A detector placed near the kitchen will result in nuisance alarms resulting in some tenants disconnecting the detectors for this reason.
- A few tenants assume that the smoke detector is an integral part of the fire alarm system in an apartment building. This assumption may have delayed the alarm on one of the recorded fires and points up the need for tenant education.

MAINTENANCE:

Annual Cleaning

To protect the substantial investment, and ensure long-term fire protection benefits of the smoke detectors, OHC has an on-going computerized maintenance follow-up program. Subject to change as experience dictates, an annual operational check and vacuum cleaning of detectors is called for. As the detector installations are only now being completed, there is limited data accumulated on maintenance.

99% Reliable

In the spring of 1977, a total of 10,011 detectors were serviced. 145 were reported defective (1.4 per cent). Discounting one instance where 48 were defective out of 510, the remaining 9,501 detectors had a first-year failure rate of one per cent. A breakdown of this is attached, showing detector models coded as Class "A", 1, 2, 3 and 4.

Data on reliability of the detectors will accumulate rapidly as more installations become of age for first annual maintenance. When available, OHC will be pleased to provide this further data to interested parties.

Any enquiries concerning information contained in this report, should be directed to Maintenance Engineering Branch, Ontario Housing Corporation, 101 Bloor Street West, Toronto, Ontario, M5S 1P8.

FIRE STATISTICSONTARIO HOUSING CORPORATION1975-77

Number of fire incidents reported, where smoke detectors
were involved:- Total = 64 (100%)

<u>Smoke Detector</u>	<u># of Events</u>	<u>% of Total</u>
Possible lives saved	- 21	- 35
Property damage minimized	- 50	- 80
No effect	- 5	- 10
Defective or inoperative detector	- 5	(see note (1))

<u>Occupancy</u>		
Family	- 52	- 80
Senior Citizen	- 12	- 20
Incapable or Handicapped	- 6	(see note (2))

<u>Fire Sequence</u>		
Occupant(s) sleeping	- 22	- 35
awake	- 27	- 40
not home	- 9	- 15
not stated	- 6	- 10

Origin of Fire:

Bedroom	- 26	- 40
Kitchen	- 20	- 30
Living room	- 7	- 10
Basement	- 7	- 10
Misc./unknown	- 4	--

Cause of Fire:

Stove	- 18	- 30
Careless Smoking	- 12	- 20
Children w/fire	- 18	- 30
Defective or overheated appliance	- 5	--
Flammables	- 3	--
Misc.	- 2	--
Unknown	- 6	--

	<u># of Events</u>	<u>% of Total</u>
Response to smoke detector by		
Occupant	- 44	- 70
Neighbor	- 15	- 25
Other person	- 4	--
Unknown	- 1	--
Fire "discovered" by smoke detector:	- 54	- 85

Note (1):

- one smoke detector installation not complete
- one detector circuit damaged in fire
- one detector was defective
- three detectors had been disconnected by residents

Note(2):

- assessment of physical handicap, age handicap (very young or very old) or possible temporary incapacity, have only been made for serious fires - fatalities, rescues, etc.

The number of fire reports studied (64) justifies making some correlations. No effort has been made to evaluate the statistical reliability of the following conclusions, and to apply them outside the context of these particular fires may not be appropriate.

CORRELATIONS:(1) Three fatal fires are included in the analysis.

In two of these fires, one person was saved by the warning of the smoke detector.

In all three of the fires, it may be concluded that a permanent or temporary incapacity of occupants contributed to the loss of life. Influence of alcohol may have been a contributing factor in one or all of the fatal fires.

(2) Family housing apparently has a larger share of fire incidents than senior citizen housing.

	<u>Family</u>	<u>Sr. Citizen</u>
% of total housing (79,000)	62%	38%
% of fire incidents (64)	80%	20%

(3) Smoke detectors "discovered" 85 per cent of all fires

The study covers 64 fires in units in which smoke detectors were installed, and either the smoke detector was mentioned in some context in the fire reports, or else later inquiry confirmed that a smoke detector was operational at the time.

Analysis shows that smoke detectors gave the initial warning in 54 instances (85 percent of the total fires).

On 10 occasions, the smoke detector played no useful role:

- one was an explosion of gasoline fumes
- one was a lightning strike
- one was a single fatality, fire went out, no alarm
- on two occasions, child awoke parents before smoke detectors sounded
- two detectors were defective (one of which was put out of action by the fire)
- three detectors were disconnected by residents

(4) Smoke detectors save lives during waking hours, too.

Of the 21 incidents where the smoke detector may have saved lives, 18 occurred when the occupants were asleep. This is the conventional reason for installation of smoke detectors.

However, on three occasions, the smoke detector has possibly saved lives when occupants were awake:

- twice when children were in danger
- once when an older man was rescued by a neighbor

(5) It's no mystery:- how and where dangerous fires start

Assuming that the 21 fires where the smoke detector gave warning which may have saved a life are typical of fires which endanger life, it is concluded:

Eight out of every 10 dangerous fires originate in the bedroom or living room, caused by careless smoking or children playing with fire.

i.e. origin in bedroom	- 13)	out of 21
origin in living room	- 5)	
caused by smoking	- 9)	out of 21
caused by children w/fire	- 8)	

(6) Smoke detectors and neighbors team up

One quarter (15) of the initial responses were made by neighbors on hearing the smoke detector.

- neighbors responded to smoke detector alarm in eight of nine fires when the tenant was not home.
- neighbors saved lives in two fires - once with help of smoke detector, once when smoke detector had failed.

(7) a. Smoke detectors save property

Property damage estimates, where provided, for the 64 reported fires are preliminary estimates only. The total estimated damage is \$175,705. The smoke detector gave early warning ranging from a minute or less when adults were around, to perhaps half-an-hour in empty dwellings. Property damage reduction would be significant.

b. Matches cost more than stoves

Of the eight fires, each with estimated damage exceeding \$5,000:

- all started in either living room or bedroom
- five were caused by children playing with matches
- seven were in daytime, or in morning after children arose.

Fires on stoves can be serious, but many cause little or no damage before discovery. In part, this is due to the ionization chamber smoke detector's propensity to detect cooking fumes. A few of the fires so reported would have caused no damage if undetected.

SMOKE DETECTOR OCCUPANCY FIRE DETAILS

Date	Place	Saved Life	Saved Property	No effect	Defective or disconnected	Family	Seniors	Disability	Occupant awake or sleeping	Origin	Cause	Response by	\$ Damage	Fatality
06/75	Ottawa	X			X				O	K	S	N		
06/75	Fort Frances	X			X				S			0	\$ 200	
12/75	Peterborough	X			X				A	B/R	C	0	100	
12/75	Tisdale	X				X			0	L/R	D	N		
02/76	Peterborough	X			X				S	B/R	C	0	Ø	
03/76	Peterborough	X			X				S	K	S	0	4000	
04/76	Ottawa	X			X				A	B/R	M	0	3500	
05/76	OH-63, Toronto	X			X				A	K	S	0	10	
06/76	OH-34, Toronto	X			X				S	L/R	M	0	2450	
08/76	FP 9/59, Toronto	X			X			X	S	L/R	M	0	25000	3
09/76	Peterborough	X			X				A	K	S	0	1000	
10/76	OH-160, Toronto		X			X		X	S	B/R	C	0	200	1
12/76	Kitchener	X			X				S	B/R		0		
12/76	London	X				X			A	K	S	0	125	
12/76	Burlington	X			X				O			N		
01/77	Brockville	X				X			K	S	N			

LEGEND: Occupant: - " ", sleeping, "A", awake, "O", out
 Origin: - "K", kitchen, "B/R", bedroom, "B", basement "L/R", livingroom
 Cause: - "S", stove (cooking), "C", cigarette (smoking) "M", children with matches or fire, "E", flammables
 Response by: "O", occupant, "N", neighbor, "OP", other person

-COMMENTS-

-left pan on stove

-ashtray to w/basket; occ. leaving when S.D. alarmed

-electric baseboard heater shorted out

-1 occupant asleep, with french fries on stove

-assume S.D. worked-replaced as fire damaged

- (3) detectors sounded, mother woke too late! Temp. incapacitated, children awake (age disability)

-discovery 2 days after event, assumed S.D. operated and in working order

-information from letter, no fire report

SMOKE DETECTOR OCCUPANCY FIRE DETAILS

Date		Place		Saved Life		Saved Property		No Effect, or Defective, or disconnected		Family		Seniors		Disability		Occupant awake or sleeping		Cause		Response by		\$ Damage		Fatality		-COMMENTS-	
02/77		OH-32, Toronto		X				X					A	B/R M	0		\$ 3000			-not sure S.D."discovered" fire							
02/77		FP 6/58, Toronto		X				X					B/R M				5500			-report is vague about adult occupant(s) time: 11:30 am Wednesday							
02/77		OH-105, Toronto		X				X					A	K S	0		200										
02/77		OH-105, Toronto		X				X					A	K S	0		600										
03/77		OH-34, Toronto		X				X					A	B/R M	0		1300			-mother in basement, child started fire upstairs							
03/77		OH-118, Toronto			X			X					A	B E	0		1850			-gasoline fire							
04/77		OH-39, Toronto					(2)	def	X				S	B M	N		2600			-children asleep-smoke inhalation & neighbour child S.D. in fire unit damaged S.D. in neighbour was U/S.							
05/77		OH-76, Toronto					dis		X				A	B E	0		5000			-gasoline fire, S.D. fuse out							
05/77		OH-157, Toronto		X						X	X		A	B/R C	N		2500			-occupant set fire to bed-ran to balcony-saved by neighbour who heard S.D.-tenant on D.V.A.-disabled							
05/77		Napanee		X						X	X		S	L/R C	O		47,000	1		-S.D. alerted woman in L/R-woke husband, who crawled to safety. Deceased woman, 65 years/almost blind							
06/77		OH-137, Toronto		X					X				L/R C	O			1,270			-not known if son who heard S.D. was asleep or not.							
06/77		Thunder Bay		X					X				O	K S	N												
06/77		Hamilton		X					X					K D	N		1,800			-stove was defective							
05/77		OH-12, Toronto			X				X				A	B L	O		4,000			-lightning							
06/77		Kitchener			X				X				S	K S	N		Ø			-occupant didn't hear S.D. neighbour did & Phoned F.D							
06/77		Timmins		X	X					X			S	B/R C	O												

SMOKE DETECTOR OCCUPANCY FIRE DETAILS

Date	Place	FIRE DETAILS										-COMMENTS-		
		Saved Life	Saved Property	No effect	Defective or disconnected	Family	Seniors	Disability	Occupant awake or sleeping	Origin	Cause		Response by	\$ Damage
06/77	OH-15, Toronto		X		X			S	B/R M O			\$ 7000		-fire started in parent's B/R by child child woke parents
07/77	Peterborough	X				X		S	B/R C O					-man asleep in L/R - wife in B/R
07/77	OH-32, Toronto		X		X			O		N	10,000			
07/77	OH-21, Toronto		X					O	E I N					-E=entrance door, I=incendiary
07/77	OH-110, Toronto	X	X		X			S	L/R C O		1,000			-2:20am, 63 yr. old woman and 1 child in apt.
07/77	OH-106, Toronto		X		X			O	K S N		1,000			
08/77	London			dis	X			A	B/R M O		2,000			
08/77	Hamilton	X	X		X			S	B/R C O		500			-not known who called F.D. probably occupant
08/77	Peterborough		X			X		S	K S N					-no real danger from fire, door broken by F.D. to gain entry, smoke detector gave alarm
08/77	OH-60, Toronto		X		X			O	K S O					
08/77	Ottawa		X		X			K		O	700			-6 am, not known if occupants awake or sleeping; cause of fire unknown
09/77	Fort Frances	X	X		X			S	B/R M O		6,000			
09/77	Newmarket			def		X		A	B/R D O		Ø			-bedlamp lying on bed, S.D. reported defective
09/77	Minaki		X		X			B/R	M O		14,000			-status of occupants at time of fire unknown, may have been asleep
09/77	Guelph	X			X			A	B M O		Ø			-2 yr. old child ignited fabric in D.H.W. heater, badly burned, S.D. alerted family
07/77	Oshawa		X		X			A	L/R O					-man asleep in L/R, man in B/R

SMOKE DETECTOR OCCUPANCY FIRE DETAILS

Date		Place	Saved Life		Saved Property	No effect Defective, or disconnected	Family	Seniors Disability	Occupant awake or sleeping	Origin	Cause	Response by	\$ Damage	Fatality	-COMMENTS-	
09/77		OH-105, Toronto		X						A	B/R	C	O	\$ 390		
09/77		Ottawa			dis	X				A	K	S	O	495		-S.D. disconnected-reason: steam from shower set it off
10/77		OH-60, Toronto		X						A	K	S	O	400		
10/77		OH-115, Toronto		X						A	K	S	O	Ø		
10/77		Guelph	X	X				X	X	S	B/R	D	O	15000		-Tenant 86 yrs.-high intensity electric heater, probably ignited bedclothes
10/77		Kingston		X						A	B/R	M	O	300		-babysitter alerted by S.D.-evac'd 2 children
10/77		OH-60, Toronto			X					S	B/R	M	O	Ø		-child set fire-warned mother. S.D. sounded
10/77		OH-101, Toronto		X						O	K	S	N	Ø		
10/77		Kingston	X	X						S	B/R	M	O	300		- children started B/R fire. S.D. awoke mother
11/77		Ottawa	X	X						S	B/R	M	O	2500		- child set fire in basement B/R.-S.D. awoke mother
11/77		OH-32, Toronto		X						A	B/R	M	O	1200		
11/77		OH-82, Toronto		X						A	B/R	D	O	300		-faulty electric clock started fire.
11/77		OH-84, Toronto		X						A	B	F	O	1000		-flammable materials by gas fired H.W. heater
11/77		OH-60, Toronto		X						A	K	S	O	125		
11/77		Guelph		X						A	B	M	O	250		-no adults home. 14 yr. old in charge
11/77		OH-108, Toronto	X	X			X			S	B/R	C	N	445		-resident 64 yrs.-neighbor responded

TOTAL OF 64 INCIDENTS 21 50 6 3def 52 12 \$175,705

ANNUAL SMOKE DETECTOR MAINTENANCE RESULTS

OF SPRING 1977 MAINTENANCE

	# DETECTORS SERVICED						# DETECTORS DEFECTIVE							
	A	1	2	3	4	5	6	A	1	2	3	4	5	6
DISTRICT "A"		4												
DISTRICT "J"		60							2					
GREENWIN	510	299						48	15					
CONDOR	253							4						
MONTREAL TRUST		175							3					
CENTRAL BRANCH	64	150						2			1			
OWEN SOUND	53							7						
BELLEVILLE		392							6					
OTTAWA	585	1075	124							1				
NORTHERN BRANCH	98	654							12					
SAULT STE. MARIE	21		184											
SUDBURY	150	768	139	100						13				
TIMMINS	61	15	30					1						
SOUTHERN BRANCH		513							11	2				
PEEL PORTFOLIO	61		141											
KITCHENER		63			251			1			5			
LONDON		585						1	1			4		
WINDSOR		423							5					
TOTAL # DETECTORS SERVICED: - 10,011	1856	7176	447	281	251	Ø	Ø	64	68	3	6	4	Ø	Ø

TOTAL # DETECTORS SERVICED: - 10,011
TOTAL # DETECTORS DEFECTIVE: - 145

PERCENT DEFECTIVE BY CLASS ----- 3.4% 0.9% 0.7% 2.1% 1.6%

